

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) An electrochemical sensor for detecting the concentration of an analyte in a fluid test sample, the sensor comprising:

a flow path for receiving the fluid test sample;

a first lead and a second lead each adapted to be electrically coupled with a detector of electrical current;

a working electrode disposed along the flow path, the working electrode being in electrical communication with the first lead;

a counter electrode in electrical communication with the second lead, the counter electrode having a low-resistance portion and a high-resistance portion, the low-resistance portion of the counter electrode being disposed along the flow path downstream from the working electrode, the high-resistance portion of the counter electrode being disposed along the flow path upstream from the working electrode, the high-resistance portion including a resistor; and

a reagent disposed on the working electrode, the reagent being adapted to react with the analyte to produce electrons that are transferred to the working electrode;

wherein a first current profile is produced at the first and second leads in response to a voltage profile applied to the first and second leads when electrical communication occurs between only the high-resistance portion of the counter electrode and the working electrode, a second current profile is produced at the first and second leads in response to substantially the same voltage profile applied to the first and second leads when electrical communication occurs between the low-resistance and high-resistance portions of the counter electrodes and the working electrode, the first current profile being different than the second current profile.

2. (Original) The sensor of claim 1 wherein the second current profile has a decay-type shape.

3. Canceled.
4. (Previously Presented) The sensor of claim 3 wherein the resistor is screen-printed onto an insulating base.
5. (Original) The sensor of claim 1 wherein electrical communication occurs between only the high-resistance portion of the counter electrode and the working electrode when a less than predetermined volume of fluid sample is received by the flow path.
6. (Original) The sensor of claim 1 wherein electrical communication occurs between the low-resistance portion of the counter electrode and the working electrode when at least a predetermined volume of fluid sample is received by the flow path.
7. (Original) The sensor of claim 1 wherein the first current profile and the voltage profile have similar shapes when electrical communication occurs between only the high-resistance portion of the counter electrode and the working electrode.
8. (Original) The test sensor of claim 1 wherein the first and second leads are electrically coupled to the detector of electrical current, the detector being adapted to generate an under-filled error signal when a current profile produced at the first and second leads in response to a voltage profile applied to the first and second leads does not have a decay-type shape.
9. (Original) The test sensor of claim 1 wherein the reagent comprises glucose oxidase.
10. (Original) The test sensor of claim 1 further comprising a reaction layer that includes the reagent, the reaction layer covering the working electrode and the low-resistance portion of the counter electrode.
11. (Withdrawn) A method for evaluating whether an electrochemical test sensor is properly filled, the test sensor including a working electrode electrically coupled to a first lead

and a counter electrode electrically coupled to a second lead, the counter electrode including a low-resistance portion and a high-resistance portion, the method comprising the acts of:

- applying a voltage profile across the first and second leads;
- measuring the current profile at the first and second leads in response to the applied voltage profile; and
- generating an under-filled error signal when the measured current profile does not favorably compare to a predetermined profile.

12. (Withdrawn) The method of claim 11 wherein the predetermined profile is a decay-shaped profile.

13. (Withdrawn) The method of claim 11 comprising forming an electrical communication between only the high-resistance portion of the counter electrode and the working electrode when the test sensor is under-filled.

14. (Withdrawn) The method of claim 11 comprising forming an electrical communication between the low-resistance and high-resistance portions of the counter electrode and the working electrode when the test sensor is appropriately-filled.

15. (Withdrawn) The method of claim 11 wherein the fluid test sample comprises blood.

16. (Withdrawn) The method of claim 11 wherein the analyte comprises glucose.

17-30. Canceled.

31. (New) The sensor of claim 1, wherein the resistor has a resistance of about 50 k Ω to about 500 k Ω .

32. (New) The sensor of claim 1, wherein the resistor has a resistance of about 250k Ω to about 350 k Ω .